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GEOGRAPHIC SCHOOL BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

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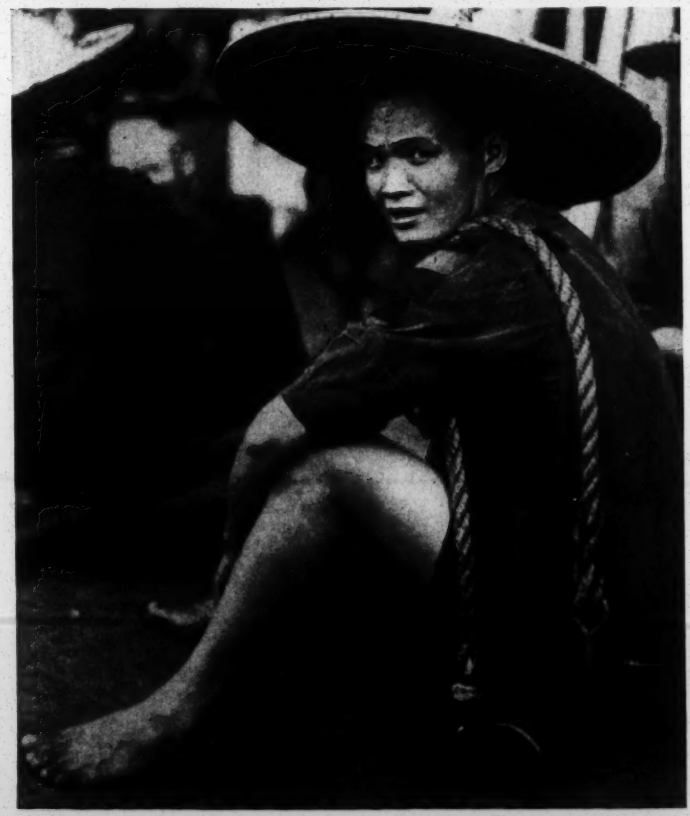

Screen Traveler, from Gendreau

A HONG KONG COOLIE RESTS IN THE SHADE OF HIS HAT

Wearing his parasol on his head, this laborer carries a portable patch of shade wherever he goes. Over the shoulder of his tidily patched coat hangs the tool of his trade—a hook-ended rope. Strong, lean men like this one pulled rickshas, carried sedan chairs, helped unload ships, and delivered heavy sacks of rice. Though prewar Hong Kong was one of the Orient's most modern cities, much transport and hauling was done by human draft. When the Japs arrived, early in 1942, they cut the city from world trade—its basis of prosperity (Bulletin No. 3).

GEOGRAPHIC SCHOOL BULLETIN

HOW TEACHERS MAY OBTAIN THE BULLETINS

The Geographic School Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers in the United States and its possessions for one year upon receipt of 25 cents (stamps or money order); in Canada, 50 cents. Originally entered as second-class matter January 27, 1922; re-entered as of April 27, 1943, Post Office, Washington, D. C., under Act of March 3, 1879. Copyright, 1945, by National Geographic Society, Washington 6, D. C. International copyright secured. All rights reserved. Quedan reservados todos los derechos.

Honshu Is Japan's Main Island in Name, Size, and Wealth

SWARMING by sea and air into the Japanese "heartland," American occupation forces have taken over in Honshu, Japan's most valuable territorial possession. Honshu, or Main—as the name is literally translated—is the largest and most populous of the nation's home islands. Honshu's position among the four home islands of Japan compares to that of England in the Scotland-England-Wales make-up of Great Britain. It contains the seat of government, most of the industrial centers, the leading ports, and important sea and air bases.

On this island is the ancient capital of Japan, Kyoto, now sometimes called the western capital. Between it and the modern capital, Tokyo, lies Japan's "Sacred Mountain," the volcano Fuji, to whose summit Japanese pilgrims have long faithfully ascended, and into whose crater thousands of suicides have jumped.

Compares in Size and Population with Great Britain

It was to Uraga harbor, on Honshu, at the entrance to Tokyo Bay, that Commodore Perry went in 1853 to open the way for communications between self-isolated Japan and the outside world.

Stretching like a ragged arc between Hokkaido and Kyushu islands, Honshu is nearly 800 miles long. Because of its elongated character and deep indentations, it has an extremely long shoreline.

Like most of Japan, Honshu is rugged and mountainous, with limited open areas for cultivation. Its ranges, running generally northeast and southwest and met by innumerable cross ridges and side branches, have forced communication routes to follow chiefly the coasts, making cross connections through available valleys by way of winding, many-tunneled lines. Japan's first railway was built in 1872 on Honshu Island, an 18-mile link between Tokyo and Yokohama.

With an area close to 89,000 square miles, counting offshore islets, Honshu is about the same size as the largest of the British Isles, or slightly smaller than New York and Pennsylvania combined. It holds, however, more than 48,000,000 people, compared with 45,000,000 for Great Britain and 23,400,000 for the two Middle Atlantic States. More than two-thirds of the inhabitants of the Japanese homeland live on Honshu. Of these 6,778,800 were reported in Tokyo in 1940.

The northern third of Honshu, less favored by harbors, soil, and climate, is comparatively little developed. It is in the remaining portion of the island that Japan's major big cities—prewar trade and industrial centers, and wartime sources of much of the country's military strength—are situated.

Largest Cities Reflect American Influence

Tokyo, Osaka, Nagoya, Kyoto, Yokohama, and Kobe, Japan's leading six cities in terms of population, are found within the southern two-thirds of Honshu. Furthermore they are all within less than 300 airline miles of one another, a significant factor in the mass air attacks that crippled the country. Tokyo, Yokohama, Nagoya, and Kobe were hit by General Doolittle's flyers in the first dramatic air raid over Japan in April, 1942. On Hiroshima, a smaller Honshu city, the first atomic bomb was dropped.

Tokyo is not only the largest city of Japan, but, normally, third in rank among world cities after London and New York. It has been one of the nation's chief manufacturing centers, specializing in peacetime foodstuffs, metal goods,

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Germaine Kellerman

RICE, STAFF OF JAPANESE LIFE, GROWS ON EVERY POSSIBLE ACRE, YET HONSHU NORMALLY IMPORTS EXTRA SUPPLIES

Harvested by hand, the grain is hung head down on racks to dry. Scarecrows guard uncut plot (left). *Ta* (paddy fields) for rice growing appear only in low, well-watered areas. *Hata* (dry land fields) cover the hill slopes. Most fields produce two or three crops a year as only one-eighth of mountainous Japan is cultivated. More than one-half of the tilled acreage is devoted to rice (Bulletin No. 1).

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London's Bridges and Boatmen Make History on the Thames

SPANS from the temporary girder bridge which for twenty years relieved traffic on the old Waterloo Bridge have been removed and sent to the continent. This action recalls the part played in the history of the British capital by the Thames River and by the steel and stone arches that connect its winding banks. The transplanted spans will be used to repair some of Europe's many war-damaged railway bridges, particularly those of the Netherlands.

Prized for its architectural beauty, the old Waterloo Bridge had been completed in 1817, two years after the battle for which it was named. It cost about $5,000,000. By 1923 one of the stone piers had sunk more than two feet. Despite many protests, authorities decided to replace it. A new Waterloo Bridge, begun in 1937, was opened in 1942.

London Bridge Played Many Parts in History

There are 15 passenger bridges over the Thames in London County. The oldest and most famous is that called London Bridge. Though frequently rebuilt, this structure has occupied practically the original site of Roman, and even earlier days. Until 1750 it was London's only bridge over the Thames, and until 1894, when the Tower Bridge (illustration, next page) was opened, there was no bridge below it.

London Bridge, razed in 1831, had been the first of the city's stone spans. Begun in 1176 and completed in 1209, it replaced one which the Romans found when they came, and which they repaired and used in Caesar's time. It served the city for more than six centuries. London Bridge is a song and a game; it was an obstacle around which Canute the Dane had to build a canal for his invading ships, and a dueling ground and a battlefield in more recent history. For more than five centuries houses lined its roadway, projecting over the river. The artists Holbein and Hogarth lived there. These houses were removed about the middle of the 18th century because they obstructed increasing traffic on the bridge.

Canterbury pilgrims, before and since Chaucer's time, passed over Old London Bridge. Holiday crowds crossed it to the Globe and other theaters, and to the bear-baitings in Southwark. It was the gateway into London for travelers landing at Channel ports.

London Bridge was never the only crossing. Boatmen had plied the Thames, London's principal highway since the city's earliest days. In Queen Elizabeth's time more than 2,000 boats, upholstered, canopied against sun and rain, ferried Londoners across the 1,000-foot river. For several hundred years they continued to carry fares along London's three-mile waterfront, upstream and downstream, soliciting business at the street-end wharves and stairs with cries of "Westward ho!" and "Eastward ho!"

The Thames Was a Roadway for Parades and Pageants

A cold winter deprived these boatmen of considerable income. When the river froze over, as it occasionally did, pedestrians crossed on foot. Fairs were sometimes held on the frozen Thames. Skating and other ice sports, usually confined to frozen Moorfields north of the city, became river pastimes.

During the 16th century, and even later, the river was London's fashionable parade. Over it were "rowed with speed" glamorous ladies and ruffed gallants of

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textiles, chemicals; and in such war essentials as steel, ships, and planes.

Near-by Yokohama, deep-sea foreign-trade port for Tokyo, and an outstanding industrial city in its own right, has been important in the production of ships and steel, as well as chemicals, machine tools, tanks, and tractors. It accounted for the refining of a large share of Japan's petroleum products.

Of the other big four among Jap cities, Nagoya and Osaka also manufactured steel, ships, and planes. Kobe produced steel and ships; Kyoto, planes. Prewar Osaka was known as the "Manchester of Japan" because of its huge cotton-textile industry. The six metropolitan centers were regarded as the most Westernized of Japanese cities, with emphasis on American style. Nagoya and Kyoto had retained, however, much of the old Japan, along with modern developments.

Besides its urban centers, Honshu holds the largest and only extensive plain of Japan proper, a productive area highly important in this mountainous, hard-to-cultivate land (illustration, inside cover). Tokyo's Kwanto Plain has an area of several thousand square miles. Normally it supports an estimated 12 to 15 million people, including 80 towns of more than 10,000.

Other fertile but smaller plains are also found on Honshu in the vicinity of Nagoya, and around Kyoto, Kobe, and Osaka. Thus the island provides a large share of Japan's typical products, including rice, garden produce, tea, fruits, wheat, barley. Mulberry production for silkworms is also important.

Honshu, like the rest of Japan, has considerable resources in timber. It produces some copper, gold, iron pyrites, coal, and a little petroleum, as well as small quantities of iron. Its mountain streams provide hydroelectric power on which much of the modern industry has been based.

Note: Honshu is shown on the National Geographic Society's Map of Japan and Adjacent Regions. A price list of maps may be obtained from the Society's headquarters, Washington 6, D. C.

For further information, see "Japan and the Pacific," in the April, 1944, issue of the *National Geographic Magazine;* "Unknown Japan," August, 1942*; and "Japan, Child of the World's Old Age," March, 1933*. *(Issues marked with an asterisk are included in a special list of Magazines available to teachers in packets of ten for $1.00.)*

Bulletin No. 1, October 1, 1945.

Hamilton from Three Lions

EVEN THE BRIDGE LEADING TO THE PALACE OF JAPAN'S EMPEROR IS A SUBJECT OF REVERENCE FOR THESE TOKYO CHILDREN

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Hong Kong Again Free to Take up World Trade

WITH the return of Hong Kong to British authority, the Union Jack again flies over a small but significant spot which for an even hundred years was a center of British influence along the China coast (illustration, next page).

Situated on the south curve of China's great southeastern bulge, the Crown Colony of Hong Kong lies within a broad area where many international interests are concentrated. Represented in this region are China, the United States, Great Britain, France, Portugal, and until recently, Japan.

Forty miles southwest across the estuary of the Canton, or Pearl, River, is the small Portuguese possession of Macau. Hong Kong is less than 400 miles west of Formosa (Taiwan); 490 miles northwest of the Philippines; 410 miles northeast of French Indochina; and 1,060 miles north of British Borneo. Before the war, Hong Kong, with Corregidor and Singapore as the two other angles, formed a triangle of British-American power in southeast Asia.

New Territories Farms Help To Feed the Colony

The Crown Colony of Hong Kong consists of the island of that name and a roughly fanshaped peninsula extending into the South China Sea from Kwantung Province. A number of other islands are also part of it. Its 390-square-mile area includes the 11-mile-long Hong Kong Island, on which stands the capital city, Victoria; the Kowloon Peninsula, jutting southward opposite Victoria; and the New Territories, comprising the comparatively large mainland region north of Kowloon, large Lan Tao, and smaller off-lying islands.

The first British foothold in this region was secured on Hong Kong Island in 1841, during the "Opium War" between China and Great Britain. The island was occupied as a naval base, and after the war became also a trading settlement. Its cession to Great Britain was confirmed by the Treaty of Nanking in 1842.

In 1860, by the Convention of Peking, Kowloon Peninsula and the near-by Stonecutters' Island were added to the colony. In 1898 an area of more than 350 square miles—the New Territories—was acquired by the British on a 99-year lease. Farmland in this additional area was particularly useful in helping to feed Hong Kong Colony, which produces little for itself. In dry years even water was sometimes imported from Manila and Singapore.

War Refugees Double Hong Kong's Population

During the century of British rule, health protection, land reclamation projects, new roads, and industrial and commercial development made Hong Kong one of the empire's leading outposts. By the 1930's this former "plague spot" of the tropics had become a great world port. Its huge docks, warehouses, cranes, and other facilities handled immense trade and traffic. Its industries included shipbuilding; processing of tin, sugar, and rice; manufacture of furniture, paper, glass, rope, textiles, and cement.

Excluding the armed forces, Hong Kong's British and other non-Chinese residents numbered a little more than 24,000. Its Chinese population by then was about 2,000,000 (illustration, cover), nearly twice the normal figure because of the hundreds of thousands of refugees admitted to the free city from Japinvaded China.

So many rich merchants and bankers fled to the colony that it was reported

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the court, from private landings of palaces and mansions whose gardens abutted on the stream. River spectacles sponsored by trade guilds and other processions were often led by the royal barge, glistening with gilt and glass, between banks crowded with spectators. No great river pageants have contributed to London's color and gaiety during the past hundred years.

Organized into a strong guild, the Thames boatmen never hesitated to complain against inroads on their revenue—the two-penny fare legally fixed in the 14th century, the building of more boats, the removal of the playhouses to the north bank, the coming of coach competition in the 17th century. Their last petition was against the erection of Waterloo Bridge. A century ago boat traffic was still further cut when the first of several tunnels was opened under the Thames.

Before World War II this vanishing race of wherry-men (harbor boatmen) was reportedly reduced to about 300 scullers. They lined up their boats beside the piers like taxis to carry sailors between ship and shore, or to take groups of stevedores out to ships in the morning and back to shore at night.

Note: London may be located on the Society's Map of Europe and the Near East, and Map of the British Isles.

For material on London, see "London Wins the Battle," in the *National Geographic Magazine* for August, 1945; "When GI Joes Took London," September, 1944; "Blood, Toil, Tears, and Sweat," August, 1942*; "Everyday Life in Wartime England," April, 1941*; "Along London's Coronation Route," May, 1937*; "As London Toils and Spins," January, 1937*; and "Some Forgotten Corners of London," February, 1932*.

Bulletin No. 2, October 1, 1945.

A. G. Buckham

LONDON BRIDGE MAY FALL DOWN, BUT THE TOWER BRIDGE CAN BREAK IN TWO

Two massive towers, topped with a cluster of spires, support London's Tower Bridge. Of steel faced with stone, the towers are connected by a 200-foot-long roadway which divides in the middle, the two parts tilting upward to permit passage of large vessels. A footwalk over the central span, 142 feet above high water, gives pedestrians passageway when the main section is raised. Ships going upstream under the bridge enter the Pool—the busy stretch of the Thames between Tower Bridge and London Bridge. Bordering this reach of the river, on the north bank, are the ancient pile of the Tower of London (right), the Port of London Authority buildings, and the customhouse.

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From Black Forest to Black Sea, "Blue" Danube Serves Europe

(President Truman has suggested that certain European waterways be internationalized. The Danube River is an important member of the group. Stories on others will follow.)

THE MIGHTY Danube River flows like an artery from the heart of Europe in its 1,750-mile course from the Black Forest of Germany to the Black Sea. This river, slicing its way between high mountain chains, cutting through uplands, meandering through lowlands, ranks second in length to the Volga among Europe's rivers. It exceeds the Russian stream in volume.

Fed by more than 300 tributaries, some of which are themselves large rivers, the Danube drains an area about the size of Texas and Louisiana. Among the world's dozen longest rivers, it is near its source a creek so narrow a man may take it in a stride, but by mid-course it is more than 300 yards wide. It broadens to a majestic three miles near the mouth. Every year more than 100,000,000 tons of silt are swept downstream, building Europe's largest growing delta, and slowly enlarging Romania and the Ukraine at the expense of inland countries.

Rises Amid Scenes of Folklore

Situated near the point where Germany, France, and Switzerland meet, the Danube's source is so near the headwaters of the Rhine that rainfall in this region has almost an equal chance of reaching the North or Black seas, some 1,100 miles apart. The Danube, contrary to the popular waltz, never seems blue, but looks chalky or chocolate.

Navigation is difficult, for high water may vary 30 feet in a short distance, and rocks and sandbars keep river captains alerted. Ocean-going freighters steam 100 miles upstream, ships of 1,500 tons reach Passau on the old Austro-German frontier, and smaller craft carrying 100 tons can proceed to Ulm, about 100 miles below the source. The river provides a navigation channel 1,600 miles long.

In its first 600 miles the Danube rushes eastward through wild rocky valleys famous in German folklore. After passing more sedately through Vienna, the river cleaves its way between the Alps and the Carpathians, and soon meanders south across the wide Hungarian plain. Reaching Yugoslavia, it is turned east again by the rugged Dinaric Alps. After boiling through the Iron Gate, a narrow two-mile gorge on the Romanian-Yugoslav border, the stream arcs eastward.

The Dobruja hills, along the Black Sea, nudge the river northward to Galati where it finally gets enough power from two large tributaries to push eastward to its mouth. Halfway between Galati and the sea the Danube divides into three main channels, and makes a delta bigger than Delaware. Dredges keep open the middle of the three channels. The north arm forms the new boundary between the Soviet Union and Romania.

"Danube" an English Equivalent for Many Native Spellings

Commercially speaking, the Danube flows the wrong way. Its source is near highly developed northwest Europe, but its lower half passes through comparatively poor middle Europe and the Balkan countries. The river pours its freight into a nearly landlocked sea far from the most important shipping lanes. Although the Danube is twice as long as the Rhine, its volume of commerce is less than half (illustration, next page).

In spite of this, Danube trade was increasing before the war. The river,

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Hong Kong had more than 500 millionaires. At the same time newspapers told of thousands of refugees sleeping in the streets, or gathered into camps in outlying districts under British supervision.

In the period before the Japanese attack, visitors found Hong Kong a fantastic place of change and paradox, of feverish preparation for defense in the midst of a booming stock market and crowded theatres, cafes, and ships; of emergency-driven doctors and welfare workers fighting disease and starvation while among the well-to-do, social life continued to be a succession of parties, yacht races, tennis matches, and fox hunts.

Then the Japanese struck by way of the New Territories. In the hills and valleys north of the harbor the British forces put up a losing fight before the overpowering Jap army broke through to the main prize—Hong Kong Island.

Note: Hong Kong is shown on the Society's Map of Southeast Asia, on which it appears in a large-scale inset.

For further information, see "Today on the China Coast," in the *National Geographic Magazine* for February, 1945; "1940 Paradox in Hong Kong," April, 1940*; and "Hong Kong —Britain's Far-flung Outpost in China," March, 1938*.

Bulletin No. 3, October 1, 1945.

Screen Traveler, from Gendreau

BELOW HONG KONG'S HILLS LIE THE CITY AND ITS DIVERSE SHIPPING

The city's name is Victoria, but it is generally called Hong Kong, the official name only for the island and for the entire colony. This picture was taken from a ferryboat plying between Hong Kong Island and Kowloon, part of the colony on the mainland. Behind Kowloon stretches New Territories, a more recent addition. The white templelike office building to the left of the Chinese junk is the new Hong Kong and Shanghai Bank, heart of British finance in China. Victoria's main thoroughfares run parallel to the five-mile-long waterfront, while intersecting streets climb the hills and are so steep that only pedestrians and sedan-chair traffic can use them.

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Geo-Graphic Brevities

"MIGHTY MO," SCENE OF JAP SURRENDER, RATED GREATEST BATTLESHIP AFLOAT

THE JAPANESE surrender party, climbing aboard the superdreadnought *Missouri* in Tokyo Bay, saw what the U. S. Navy proudly calls "the most formidable craft afloat." This colossus of the sea, dubbed "Mighty Mo" by her crew, is the last word in super naval construction. She had been with the fleet only ten months.

But those were busy months, and the Japs have often felt the *Missouri's* terrific wallop. Joining the Pacific Fleet in November, 1944, and the Third Fleet in January, 1945, the *Missouri* was part of the force which made the first carrier raids on Tokyo. Her thunderous 16-inch guns helped blast a path for Marines invading Iwo Jima and Okinawa.

For two months the *Missouri* protected carriers of Vice-Admiral Mitscher's Task Force 58 in mounting raids on the Jap home islands. On V-E Day she was detached and returned to an advance base for refitting as Admiral Halsey's flagship. The *Missouri* has been struck only once, on April 11, by a suicide plane, with no casualties and little damage.

This naval giant is a study in superlatives. Fourth, and probably last, of the Iowa class of super-battleships, the *Missouri* displaces nearly 53,000 tons when fully loaded. Her overall length is 860 feet; beam, 108 feet. A speed of over 30 knots gives her claim to being "the fastest battleship in the world." Nine 16-inch guns and formidable lighter armament make her probably the most heavily gunned ship afloat. Her ponderous size makes her, next to the solid earth itself, the most stable gun mount in the world. Each of her 16-inch guns can hurl a ton of steel and explosives 20 miles with deadly accuracy.

The ship's electric plant would be capable of providing electric energy for the total industrial and civilian demands of a city the size of Santa Fe, New Mexico. About 156 tons of paint was applied to protect her surface, and at the launching almost 50 tons of special greases coated the ways.

The present *Missouri* is the third United States battleship to bear that name. In addition, during the Civil War, the Confederate States built an ironclad steam ram, named for the "show me" state. The first *Missouri* was one of the Navy's early steam paddle-wheel ships. Commissioned in 1842, the vessel was destroyed the next year by a disastrous fire in the harbor of Gibraltar. The second *Missouri* was a first-class battleship of 12,500 tons, commissioned in December, 1903. She rendered valuable service in the First World War, and was scrapped in 1923 according to the terms of the Washington Naval Treaty.

President Truman and his family have a personal interest in the present *Missouri*. His daughter Margaret launched the ship at the Brooklyn Navy Yard in January, 1944. Mr. Truman, then a senator, was the principal speaker at the launching. A nephew of Mr. Truman serves on the ship as a first-class seaman.

Note: A series of 11 color photographs of the *U.S.S. Missouri* appears in the March, 1945, issue of the *National Geographic Magazine*.

CENTRAL AMERICA'S FOUR-EYED FISH SEARCH AIR FOR FOOD WHILE UNDER WATER

FOUR-EYED fish that see near and far with the aid of bifocals comprise the miniature, living submarine fleet of Central America. "Periscope eyes" enable them to stay submerged while scanning the water surface for prey.

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for most of its length, is wide and it carries a fairly uniform volume of water. Its usefulness varies greatly in different regions. Between Vienna and the Iron Gate, where it placidly traverses the Hungarian plain, it is best suited for local trade. In Romania, though the Danube is the most used waterway, it fails to live up to expectations because of the swift current through the Iron Gate, low marshy banks, a fluctuating water level, and the silting-up of the delta mouths.

The river connected seven prewar countries, flowed through three capitals—Vienna (Wien), Budapest, Belgrade (Beograd)—and near a fourth, Bucharest (Bucuresti). Countless river ports were linked with a means of cheap transportation for bulky goods. Grain, lumber, oil, and wool traveled westward; coal and manufactured goods drifted eastward. Brăila and Galati, Romanian twin ports located about 100 miles inland at the head of deepwater navigation, each handled more tonnage than any Romanian seaport.

"Danube," an Anglicized word, is almost unknown in the river's native lands. Germans know the river as Donau; Czechs as Dunaj; Hungarians as Duna. Farther down the river Yugoslavs and Bulgarians say Dunav, Romanians say Dunărea, and the Russians refer to it as Dunai.

From 1919 to 1939 an international commission regulated river traffic and supervised maintenance of channels. An earlier commission, started in 1856, tamed the river, dredging sandbars in the lower course, blasting channels through the mountain passes, creating for the first time a long, important trade route.

Note: The Danube is shown on the Society's Map of Europe and the Near East.

For further information, see "Caviar Fishermen of Romania," in the *National Geographic Magazine* for March, 1940*; "Budapest, Twin City of the Danube," June, 1932*; and "Danube, Highway of Races," December, 1929; and in the GEOGRAPHIC SCHOOL BULLETINS, October 23, 1944, "Historic Rivers Make New History: Rhine—Danube."

Bulletin No. 4, October 1, 1945.

Erdelyi

THE DANUBE FORMS A LINK AND A BARRIER BETWEEN BUDA AND PEST

Hungary's dual capital sprawls on both sides of the busy river. The Royal Palace (beyond the bridge) crowns the heights of Buda, across the Danube. In the foreground a Pest market sells goods many of which were brought there by boat. The side-wheeler in the river recalls boats of a similar type seen in United States Midwest rivers.

Anableps dowei is the scientific name for this unusual fish, which has been observed in the Lempa River of El Salvador by a National Geographic Society staff photographer. *Anableps* (from the Greek verb meaning to look up) is fairly common in Central American streams and is a little fellow, averaging six inches and rarely exceeding a foot in length.

The fish actually has two froglike pop-eyes, each divided into halves. Between leaps and dives it almost always swims just below the surface with the upper halves of its eyes out of water, looking for floating food, and the lower halves submerged, alert for submarine enemies. The upper halves are thus adapted for long vision in air, like the human eye; the underwater halves are shortsighted, as with ordinary fish eyes.

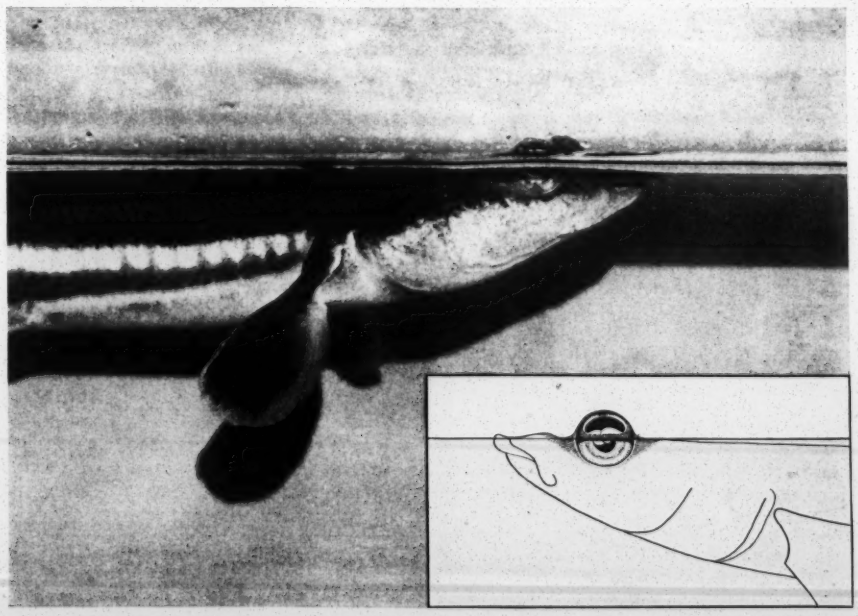
No muscles change the shape of the lens for focusing near and far as in the human eye, scientists explain. Instead, *Anableps* gets its dual vision by the elliptical shape of the eye lens. Air-vision rays pass through the short dimension; water-vision rays through the longer.

Cuatro-ojos (four-eyes) is the native's name for the fish, which swims with an eel-like wriggle, and is wary and hard to catch. Lacking eyelids and tear glands, it must constantly dip under water to keep the air-vision halves moist. *Anableps* likes swift-running, aerated water and does not thrive in aquariums.

Note: The Lempa River in El Salvador, where the four-eyed fish have been caught, is shown on the Society's Map of Mexico, Central America, and the West Indies.

For additional information, see "Coffee Is King in El Salvador," in the November, 1944, issue of the *National Geographic Magazine*.

Bulletin No. 5, October 1, 1945.



Mrs. A. M. Awl

EL SALVADOR'S "SUBMARINE FISH" SCANS THE WATER WITH PERISCOPE EYES

This queer bifocal fish of Central America lies submerged just below the water level and, with two sets of eyes, watches the surface for food while searching the under-water world for enemies. Officially named *Anableps dowei* (from the Greek *anablepein:* to look up), the little fish is called *cuatro-ojos*—four-eyes—by the natives. When Luis Marden, *National Geographic Magazine* staff photographer and writer, chaffed a fisherman in El Salvador's Lempa River for failing to catch a single *Anableps* after several throws of the net, the native replied, "But, senor, you do not understand; those animals have *four* eyes!". Scientists do not know whether little "four-eyes" sees both above- and below-water images at the same time.